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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/615,019	07/13/2000	George F. Kirkman	PD-990235	3957

7590

06/30/2003

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EXAMINER

NGUYEN, KHANH V

ART UNIT

PAPER NUMBER

2817

DATE MAILED: 06/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/615,019

Applicant(s)

KIRKMAN, GEORGE F.

Examiner

Khanh V. Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4 and 6-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6,8-13 and 15-19 is/are rejected.
- 7) ☒ Claim(s) 7,14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 5) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

In view of the appeal brief filed on February 2, 2003, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 11, 12, 18, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant admitted PRIOR ART (Fig. 1) in view of Little et al. (5,430,568).

Regarding claims 1, 12, 19, applicant's PRIOR ART (Fig. 1) discloses the claimed invention except that pre-distortion network is not located in the high temperature zone.

Little et al. (Fig. 1) disclose pre-distortion compensation occurs at the transmitter location (see col. 8, lines 64-67), as illustrated in Figure 1 where compensation circuits (36-39) are located adjacent to output lasers (21-24), which also generate heat.

Accordingly, it would have been obvious in view of the reference, taken as a whole, to have modified the circuit of applicant's PRIOR ART Figure 1 to have included a pre-distortion network to operate adjacent the output TWT in high temperature zone, as taught by Little et al. Such a modification would have imparted the advantageous benefit of compensating the non-linearities of the device (see col. 8, lines 64-67) as taught by Little et al., where the non-linearity is due to the distortion or operating conditions of a device which can be temperature related (see col. 7, lines 27-48). While the output of the laser of Little et al. is optical, the compensation occurs on the input (RF) side and is analogous to the predistorter claimed.

Regarding claim 2, 11, 18, PRIOR ART (FIG. 1) disclose two RF amplifiers (12 and 16) coupled in series and in a low temperature zone wherein the amplifiers (12 and 16) may be read as a first and second amplifier respectively.

Claims 4, 6, 8-10, 15-17, are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant admitted PRIOR ART (Fig. 1) in view of Little et al. (5,430,568) and further in view of Vaughn et al. (5,703,531) (cited in Paper No. 9).

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Claims 4, 6, 13, Admitted PRIOR ART and Little et al. disclose the claimed invention except the schematic of the pre-distortion network.

Vaughn et al. disclose a schematic of a pre-distortion linearizer comprising: at least one limiter (34/28), wherein limiter (28) can be read as a first limiter coupled to an attenuator (30) which can be read as a first attenuator and a phase adjust (32) coupled in series with attenuator (30) can be read as a phase shifter.

Accordingly, it would have been obvious in view of the references, taken as a whole, to have modified the circuit of PRIOR ART to have included a pre-distortion network comprises elements disclosed in Vaughn et al. Such, as modification would have provided a small, compact, light weight predistortion device with excellent broadband performance (see col. 1, lines 58-65) as taught by Vaughn et al., to PRIOR ART reference, thereby suggesting the obviousness of such a modification.

Regarding claims 8, 15, Vaughn et al. (Fig. 1) disclose slotline transmission line (26) in parallel with limiter (28), attenuator (30) and phase adjust (32).

Regarding claims 9, 16, Vaughn et al. (Fig. 1) disclose attenuator (36) in slotline transmission line (26) may be read as at third attenuator.

Regarding claims 10, 17, Vaughn et al. (Fig. 1) a limiter (34) may be read as a second limiter coupled in series with attenuator (36).

Allowable Subject Matter

Claims 7 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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The following is a statement of reasons for the indication of allowable subject matter:

Claims 7 and 14 are objected to because none of the prior art disclosed or suggested showing the particular structure and/or operation recited in these claims namely: a pre-distortion network comprises a second attenuator (58) coupled in series with phase shifter (56).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additional references (Hiraizumi (5,939,920); Ghannouchi et al. (6,255,908)) show further analogous prior art circuitry.

This art is deemed relevant and should be carefully reviews before any amendment is filed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh V. Nguyen whose telephone number is (703) 306-9058. The examiner can normally be reached from 8:00 AM-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (703) 308-4909. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Customer Service at (703) 872-9317.

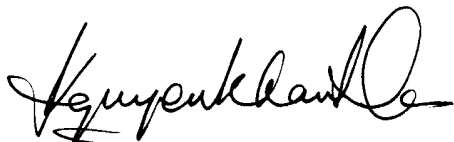
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NKV

06/23/03

A handwritten signature in black ink, appearing to read 'Khanh Van', written over a horizontal line.

Nguyen, Khanh Van

Group 2800, Art Unit 2817